

**Notice of Allowability**

Application No.

09/576,211

Examiner

Julian Mercado

Applicant(s)

YANAGIDA ET AL.

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2-23-04.
2. ☒ The allowed claim(s) is/are 1-5, 7-16, 18-31, 33-42, 44-57, 59-69 and 71-80.
3. ☒ The drawings filed on 5-23-00, 11-25-02 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

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## **DETAILED ACTION**

### ***Remarks***

This Office action is responsive to applicant's request for reconsideration filed February 23, 2004.

Claims 1-5, 7-16, 18-31, 33-42, 44-57, 59-69 and 71-80 are pending.

### ***Claim Rejections - 35 USC § 103***

The rejection of claims 1, 2, 7-13, 18-28, 33-39, 44-54, 59-63, 65, 66 and 71-79 under 35 U.S.C. 103(a) based on Mabuchi et al. (U.S. Pat. 6,156,432) and Kimihito et al. (JP 10-223223) has been withdrawn.

The rejection of claims 3, 4, 14, 15, 29, 30, 40, 41, 55, 56, 64, 67, 68 and 80 under 35 U.S.C. 103(a) based on Mabuchi et al., Kimihito et al. and Takami et al. has been withdrawn.

The rejection of claims 5, 16, 31, 42, 57 and 69 under 35 U.S.C. 103(a) based on Mabuchi et al., Hamada et al. and Tamaki et al. has been withdrawn.

### ***Allowable Subject Matter***

Claims 1-5, 7-16, 18-31, 33-42, 44-57, 59-69 and 71-80 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art of record and to the examiner's knowledge do not teach or render obvious at least to the skilled artisan the instant invention regarding a first carbon material serving as an inner core particle with a coating of a second carbon material on its outer surface, the second carbon material containing, in a first

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embodiment, at least 1 wt. % to up to 15 wt. % of boron and, in a second embodiment, nitrogen and at least 1 wt. % to up to 15 wt. % of boron.

The prior rejection based on Mabuchi et al. and Kimihito et al. has been withdrawn. The examiner acknowledges the English translation of the Kimihito et al. disclosure provided by applicant. The examiner has reconsidered the basis for rejection based on Mabuchi et al. and Kimihito et al. in view of the more complete and accurate translation of Kimihito et al. and in consideration of applicant's salient arguments for patentability.

Applicant on page 2 of the present response submits that while Kimihito et al. discloses a negative electrode having boron present in an amount of 0.1 to 10 wt. %, it does not disclose a coating of a second carbon material containing this boron material on an outer surface of a first carbon material. Upon further consideration, the examiner acquiesces with applicant's assertion. The present claims require the coating of the second carbon material to be on the outer surface of the first carbon material, the first carbon material serving as an inner core *particle*. (emphasis added) In contrast, Kimihito et al.'s disclosure is drawn to boron and nitrogen being contained in the *layer planes* of networks of carbon (translation on page 16), with the boron and nitrogen compounds having a "catalytic effect for graphitization" (page 17) and with the boron and nitrogen compounds as catalysts being "inserted between *layers* of the graphite crystal, or that carbon atoms forming six-membered ring network in *planes* are replaced with said catalyst". (page 18) (emphasis added) Thus, a combination of Mabuchi et al. and Kimihito et al. does not render obvious applicant's claimed second carbon material containing a boron or boron and nitrogen compound coating a first carbon material serving as an inner core particle.

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As a matter of illustration, the instant coating of the second carbon material [2] on the outer surface [3] of a first carbon core particle [1] is understood to be as shown in Figure 2 of the present application.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



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Patrick Ryan  
Patent Examiner  
Center 1745